

CONFIDENTIAL

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The Files

2 October 1959

[redacted]

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Trip Report - [redacted]

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1. On 1 October 1959 [redacted] Mr. Haas, [redacted] and the writer met with representatives of [redacted] at the [redacted] offices in Washington to discuss [redacted] contract to build an off-line storage unit for use with the [redacted]. The main purpose of the meeting was to discuss the incorporation of the [redacted] and code matrix into the [redacted] unit, rather than the use of the entire [redacted] as a separate code generator. It was hoped by the writer that this would greatly simplify the [redacted] unit, since storage in the memory would then be parallel rather than serial.

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2. It had been decided not to take issue with the over-all Burroughs approach at this date. Since the [redacted] design is already nearing completion this would only result in confusion and possible objections of interference. The [redacted] approach, which uses flip-flop and diode logic circuits exclusively, will surely meet the terms of the contract even though it does not employ the simpler and more reliable transistor/computer core circuitry developed in recent years. The R&D Laboratory is, at present, investigating two of the best lines of advance toward an off-line keyer having its own keyboard and using core transistor drive circuitry to the fullest extent. The writer, who is connected with one of these efforts at the Laboratory, had expressed a desire to discuss some of the Laboratory circuits with the possibly better informed Burroughs engineer, and this was also tentatively on the agenda.

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3. [redacted] and the writer outlined the means by which the [redacted] generator matrix of the [redacted] could be installed in the [redacted] package. The [redacted] engineers said that instead of simplifying the problem this would complicate it considerably. It appeared that the main complication would be the necessity for having four sense amplifiers instead of one. Even though only half as many drive flip-flops and diodes would be required the addition of three more sense amplifiers having three transistors apiece and operating class A with high collector currents would be undesirable. There followed a discussion between [redacted] and the representatives concerning temperature and other specifications for the storage device.

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4. At [] suggestion a few of the R&D Laboratory circuits were described to the [] project engineer for comments and possible suggestions as to improvement. The first was a sense amplifier still on the drawing board which would have a calculated 5 to 1 advantage in sensing threshold margin over the type in use at Burroughs. It employs only one transistor, two computer cores, and six small parts, and draws relatively low currents. Second, a current/source driver was described which produces highly regulated pulses of thermistor-determinable amplitude; and third, a sequential pulser for memory drive was described. The latter two circuits are among those already tested at the Laboratory. All three employ regenerative transistor/computer core techniques.

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5. Several questions were answered concerning these circuits but a lengthy discussion did not ensue. The Burroughs engineer copied down the sense amplifier circuit but said that his main field was with flip-flops and transistors and that his experience with cores was slight. Another [] representative added that [] had abandoned cores to a large extent when it was decided that transistors were here to stay. Later he pointed out in contradiction that transistor/core circuits were still in the domain of a more advanced R&D department at [] and an invitation was extended to the writer to meet with this group of engineers for a possible profitable comparison of results. The [] project engineer did not have an opportunity to describe interesting aspects of the Burroughs storage unit before the meeting adjourned for lunch.

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6. At the close of the meeting, the [] representatives were less opposed to the proposal made earlier in the meeting involving incorporation of the keyboard into their unit. They said that several accessory circuits could be eliminated by access to the code matrix itself, in addition to the elimination of a separate power supply and an extra set of batteries. It was doubtful that they will use parallel storage.

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